

UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF OHIO  
EASTERN DIVISION

HODGINS	:	CASE NO. 1:02CV1454
	:	
PLAINTIFF	:	
	:	JUDGE ANN ALDRICH
	:	
v.	:	
	:	
CARLISLE ENGINEERED	:	
PRODUCTS.	:	
et al.	:	
DEFENDANTS.	:	

**PLAINTIFF'S RESPONSE IN OPPOSITION TO**  
**DEFENDANTS' MOTION TO EXCLUDE**  
**EXPERT TESTIMONY OF**  
**DR. PETER THORNE**

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**STATEMENT OF ISSUE PRESENTED**

Is Dr. Peter Thorne's testimony regarding the toxicological profiles of toxicants around and under the Carlisle site admissible when he adhered to the standard methodology for toxicological profiles and when his testimony will assist the trier-of-fact to understand issues related to most, if not all, of Plaintiff's claims?

### **SUMMARY OF ARGUMENT**

Dr. Thorne's testimony is admissible under *Daubert* because it is relevant and reliable. Likewise, Dr. Thorne is properly qualified to render the toxicological profiles. Thus, Defendant's Motion to Exclude the Testimony of Dr. Peter Thorne must be denied.

Dr. Thorne's toxicological profiles will assist the trier-of-fact in understanding central issues such as: (1) the need for Defendants to comply with their Resource Conservation and Recovery Act Transfer, Storage, and Disposal facility obligations, including their corrective action obligations; (2) the substantiality of the potential harm posed to the public and environment by the site conditions; and (3) the scope and gravity of the nuisance and trespass onto Plaintiff's property. These toxicological profiles do so by explaining that the toxicants of concern are not benign and, in fact, based on current scientific knowledge are harmful to both humans and the environment.

Additionally, Dr. Thorne adhered to the relevant methodology – that for creating a toxicological profile – when rendering his opinion. That methodology has survived the scrutiny of peer review and publication. The methodology has been generally accepted in the field of toxicology for over 25 years and was not created for the purposes of this litigation. Additionally, the underlying bases for Dr. Thorne's toxicological profiles have been the subject of testing. Thus, the applicable *Daubert* relevancy requirements are satisfied.

Defendants' arguments about exposure assessment and toxicologic risk assessment (which go to both relevance and reliability) are inapplicable to the case at bar. Plaintiff is not alleging that bodily injury was caused through acute exposure to one chemical. Rather, this case involves claims under a broad remedial statute designed to protect human health and the

environment, and tort claims for property damage and business loss. Exposure assessments and risk assessments are not required for those claims. More importantly, exposure assessments and toxicologic risk assessments are not proper in this context because this case involves chronic exposure to an array of chemicals through multiple media. Toxicological profiles are proper because they account for the potential full range of adverse health effects.

Based on the foregoing, Defendant's Motion to Exclude the Testimony of Dr. Peter Thorne is not well-taken and should be denied in its entirety.



## **MEMORANDUM**

### **I. Introduction**

The central claims<sup>1</sup> in the case at bar involve the Resource Conservation and Recovery Act (“RCRA”) – a prophylactic health and safety statute, *i.e.*, it is aimed at ***preventing*** potential harm to people and/or the environment. These claims do not require proof of causation of bodily harm or proof of bodily harm, as is required by certain tort damage cases that give rise to most of the *Daubert* decisions<sup>2</sup> cited by Defendants. These RCRA claims do not even require quantification of the future threat of harm in the form of a risk assessment. In fact, the initial part of the remedy sought by Plaintiff Hodgins is to compel the full investigation of the sources of contamination identified by Plaintiff in this litigation, which contamination is in and around the Defendants’ facility.<sup>3</sup> Many of these unidentified or inadequately identified sources of contamination need to be removed and the spread of contamination from these sources needs to be eradicated, based on the findings of the full investigation sought by Plaintiff.

Proof of these claims and the need for the remedy sought are established by identification of:

1. Improper disposal practices by Defendants;
2. Sources of contamination on or under Defendants’ property;
3. Pathways of migration that allow movement of contaminants on or under Defendants’ property into the immediate and surrounding soils, water, air, and or groundwater;

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<sup>1</sup> Plaintiff’s RCRA Imminent and Substantial Endangerment Claim is part of Count I of Plaintiff’s Amended Complaint, and Plaintiff’s RCRA TSD claims are found in Count VIII.

<sup>2</sup> *Thomas v. FAG Bearings Corp.*, 846 F.Supp. 1382 (W.D. Mo. 1994), while not a bodily injury case, does involve expert testimony being offered for the causation element of a claim, unlike in the case at bar.

<sup>3</sup> The Court need only review p. 2 of the Complaint (“The Plaintiff seeks injunctive relief to compel Defendants to: fund and/or undertake the comprehensive investigation...of the contamination...”) and p. 32 under Relief Requested (“...grant relief...to thoroughly and comprehensively investigate, test and assess the full nature and extent of the environmental contamination...”)

4. the existence of potential human, animal, plant, or other environmental receptors at the end of the pathways of migration;
5. the identification of “toxicological profiles” for at least some of the chemicals that threaten to migrate through or along these pathways;

While not essential to the proof of a RCRA case, Plaintiff in this case has shown the presence of some contaminants at or above regulatory limits.

Dr. Rice and Dr. Bell provide opinion testimony relevant to issues 1-4, and the exceedances of regulatory limits. Dr. Peter Thorne provides the scientific identification of *toxicological profiles* of “chemicals of concern,” as well as the synergistic and additive threats posed by the array of chemicals at and around Defendants’ facility (issue 5).

This is the context in which the Court must decide whether: (1) Dr. Thorne’s toxicological profiles are relevant to *any* issue in this case and (2) whether he followed an appropriate methodology in developing the toxicological profiles that he offers the Court.

In fact, Dr. Thorne’s toxicological profiles are relevant to *many* issues in this case. Dr. Thorne’s testimony will, for example, assist the trier-of-fact in evaluating: (1) the gravity of the conditions at the site by identifying the multiple threats associated with the chemicals that are migrating or threaten to migrate along still open pathways; and (2) the need for Defendants to comply with their corrective action obligations under RCRA, including their duties to perform corrective action investigation and to remediate all releases from their Solid Waste Management Units (“SWMUs”).<sup>4</sup>

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<sup>4</sup> This Court has already found that Carlisle Engineering Products, Inc. and Carlisle Corporation are owners and operators of a hazardous waste treatment, storage, and disposal (TSD) facility under the federal Resource Conservation and Recovery Act (RCRA) and State Hazardous Waste Laws and have violated TSD program requirements, including the requirement to perform corrective action. The court deferred decision on the remedy for those violations. (Doc. 118).

Similarly, as discussed below, the toxicological profiles are relevant to the torts of nuisance and trespass and will aid the trier-of-fact in deciding those issues. However, there are no issues of toxicological causation presented by any tort pled.<sup>5</sup>

Second, as detailed below, Dr. Thorne adhered to the relevant methodology for creating toxicological profiles. Indeed, Defendants offer no testimony or other evidence that he did not.

Therefore, Defendants' Motion to Exclude the Testimony of Dr. Thorne must be denied.

## **II. Dr. Thorne's Opinions**

Dr. Peter Thorne, a renowned toxicologist, not only provides toxicological profiles describing multiple hazards associated with chemicals released from the Carlisle facility, but also describes additive and synergistic effects that occur with combined exposure to these chemicals.

Contrary to Defendants' assertions, there is a complex combination of contaminants around the Carlisle facility:

- chlorinated solvents, including trichloroethylene (TCE), tetrachloroethylene (PCE); 1,1,1, Trichloroethane (TCA), 1,1, Dichloroethane (DCA), 1,1 Dichloroethene (1,1, DCE), and, 1,2 Dichlorethyelene (1,2, DCE), are found in the groundwater both under the facility and beneath the community surrounding the facility; (*See e.g.*, Ex. A to Defendant's Motion to Exclude Testimony of Dr. Bruce Bell, pp. 6-11)
- these same chlorinated solvents are found in the soil, soil gas and sediment at and around the Carlisle facility; (See Fig. 3-1, Total VOC Concentrations in Soil Gas, Cox-Colvin & Associates, Inc., Environmental Services, Ex. A to this Response in Opposition, Notice of Manual Filing Attached);
- metals such as lead, cobalt, chromium (including hexavalent chromium) are found in, at least, the soils and sediments at and about the facility, *e.g.* under the drain line leading to the Farmwald property and in the sedimentation pond at the headwaters of the creek that flows though the community; (*See* Ex. A to Defendants' Motion to Exclude Testimony of Dr. Bruce Bell, pp. 10)

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<sup>5</sup> Mr. Hodgins also pled negligence as a result of the negligent damage to his property because the Defendants contaminated his groundwater, soils, and sediments with industrial solvents. He also brought an action for damage and property loss resulting from Defendants' ultrahazardous activity. None of these counts contain a claim for bodily injury.

- Vinyl chloride is found in soil gas; (Cox-Colvin & Associates, Inc. Environmental Services, Figure 5, Soil Gas Concentrations Vinyl Chloride, Ex. B to this Response in Opposition, Notice of Manual Filing Attached);
- Polychlorinated biphenyl (Aroclor-1260) is present in at least the soils and sediments throughout the site (*See generally*, Ex. A to Defendants' Motion to Exclude Testimony of Dr. Bruce Bell).
- Semi-volatile chemicals including bis (2 ethylhexyl) phthalate are present in, at least, the soil and sediments throughout the site, *e.g.* along the drainage ditch, around the water tower, in the western field; (*See* Ex. A to Defendant's Motion to Exclude Testimony of Dr. Bruce Bell, pp. 9)
- Polycyclic Aromatic Hydrocarbons including acenaphthene, anthracene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, 1245 dibenz(a,h)a anthracene, indeno (1,2,3 -cd)pyrene are present in, at least, the soils and sediments at the site, *e.g.* along the drainage ditch, around the water tower, in the western field; (*Id.*).

Dr. Thorne's evaluation of the above and other toxicants in his report explains, *inter alia*, to the trier-of-fact: (1) the toxicologic properties of certain chemicals used by and/or released from the Carlisle facility; (2) the harmful effects to humans, the environment, and wildlife that can occur from exposure to the chemicals found at the Carlisle facility; (3) the additive and synergistic effects that can occur due to exposure to multiple chemicals and the increased toxicity that can be caused by exposure via multiple routes (i.e. inhalation, ingestion, dermal); and (4) the meaning of carcinogenic and other relevant terms, as defined in the field of toxicology. Dr. Thorne offers opinions on which toxicants have those characteristics. (*See* Thorne Report, Ex. C, Notice of Manual Filing attached).

In rendering his toxicological profiles of the organic chemicals and metals found at the site, Dr. Thorne examined documents and a soil study of the site produced during discovery to verify the presence and use of chemicals at the Carlisle facility and reviewed and relied upon standard texts in the field of toxicology, applicable peer-reviewed articles and studies, and

information from reputable governmental sources. As part of this process, he brought his education and years of experience to the task of rendering his evaluation. This same experience and expertise will assist the trier-of-fact to understand the key issues detailed below. Defendants do not deny that these toxicological profiles are central to Plaintiffs' RCRA claims and even admit that Dr. Thorne did a "hazard identification" (avoiding use of the phrase "toxicological profile"). Defendants do not rebut the relevance of the profiles to the reports of Dr. Bell and Dr. Rice. Nor do they question the accuracy of Dr. Thorne's toxicological profiles.

### **III. Standards for the Admissibility of Expert Testimony**

In *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), the Supreme Court established a two-pronged test for the admission of scientific testimony in which the trial court must "ensure that any and all scientific testimony or evidence admitted is not only relevant, but reliable." *Id.* at 589. In this "gatekeeping role", the trial court is to make "a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid" (reliability) and "whether that reasoning or methodology properly can be applied to the facts in issue," (relevancy). *Id.* at 592-93.

In order to meet the relevancy requirement, "there must be a 'fit' between the inquiry in the case and the testimony..." *United States v. Bonds*, 12 F.3d 540, 555 (6th Cir. 1993), *citing Daubert*, 509 U.S. at 591, 113 S.Ct. 2786. "[F]it" simply means that the testimony must "assist the trier-of-fact to understand the evidence or to determine a fact in issue." *Bonds*, 12 F.3d at 555. If the proffered testimony is "relevant to **any issue** in the case," then the relevance requirement is met. *Bonds*, 12 F.3d at 557 (emphasis added), *citing Daubert*, 113 S.Ct. at 2795. If relevant and reliable, a trial court may only exclude expert testimony under Rule 403 if the probative value of the evidence is **substantially outweighed** by the prejudicial effect of the

evidence. *See* Fed. R. Evid. 403. Prejudice is not, however, the “damage to a defendant’s case that results from the legitimate probative force of the evidence...” *Bonds*, F.3d at 567, *citing United States v. Schrock*, 855 F.2d 327, 335 (6th Cir. 1988), *quoting United States v. Mendez-Ortiz*, 810 F.2d 76, 79 (6th Cir. 1986), *cert denied*, 480 U.S. 922 (1987).

Reliability means “evidentiary reliability” or “trustworthiness”, which in turn connotes “scientific validity.” *Bonds*, 12 F.3d at 555, *citing Daubert*, 509 U.S. at 590, n. 9. Among the non-dispositive and non-exhaustive list of factors for determining reliability, the Supreme Court included:

- a. Whether the methodology has been subjected to peer review and publication; and
- b. Whether the methodology has gained general acceptance in the scientific community.

*Daubert*, 509 U.S. at 593-594. The reliability test is a “flexible” one. *Kumho Tire v. Carmichael*, 526 U.S. 137, 141 (1999). As the Court stated in *Kumho*, “the law grants a district court the same broad latitude when it decides how to determine reliability as it enjoys in respect to its ultimate reliability determination.” *Id.* at 142.

Finally, Rule 702 of the Federal Rules of Evidence requires that the expert be qualified, either by knowledge, skill, education, training or experience, to give the proffered testimony.

Importantly, the “rejection of expert testimony is the exception rather than the rule.” Advisory Committee Notes to Rule 702. In most circumstances, “[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.” *Daubert*, 509 U.S. at 596. For example, purported “weaknesses in the factual basis of an expert witness’ opinion...bear on the weight of the evidence rather than on its admissibility.” *McLean v. 988011*

*Ontario, LTD.*, 224 F.3d 797, 801 (6<sup>th</sup> Cir. 2000), *quoting United States v. L.E. Cooke Co.*, 991 F.2d 336, 342 (6<sup>th</sup> Cir. 1993).

#### **IV. Argument**

##### **A. Dr. Thorne is qualified to render the proffered opinion.**

There should not be any question that Dr. Peter Thorne is qualified to offer the toxicological profiles and other opinions in this case based on his training, education, and experience, as documented in his curriculum vitae. See Ex. C.

In fact, Defendants cite to the leading text in the field of toxicology, Casarett & Doull's Toxicology: The Basic Science of Poisons (Curtis D. Klaassen 6<sup>th</sup> Ed. 2001), for which Dr. Thorne wrote the chapter entitled *Occupational Toxicology* (Chapter 33). He holds a B.S. in Chemical Engineering, an M.S. in Biomedical Engineering, and a Ph.D. in Environmental Toxicology (all from the University of Wisconsin), and did post-doctoral work in Immunotoxicology at the University of Pittsburgh. *See* Ex. C, at 11. He has been a professor of toxicology for nearly 20 years at the University of Iowa's renowned Department of Occupational and Environmental Health, has served on and chaired many public advisory committees relating to toxicology, authored and co-authored over 100 peer-reviewed papers, and has been a co-investigator in over 100 research studies related to toxicology and environmental health. What is more, Dr. Thorne has consulted for industry and government on matters relating to toxicology and environmental issues.

He described his experience in the field of toxicology in the following manner:

"My published work, much of it is, indeed, focused on pulmonary or immunotoxicology. However, I teach toxicology at the undergraduate and graduate level, and I teach general environmental health, and I teach environmental epidemiology, a variety of subjects. So I have expertise that is represented more in my teaching that is broader than what is represented in the particular areas where I am currently actively doing research. Within

my published record, I have also looked at pesticide degradation and issues of the way toxic materials behave in the environment.”

(Thorne Depo., pp. 27-28)(Relevant Thorne deposition transcript pages attached hereto as Ex. D).

In sum, Defendants have not, and cannot, challenge Dr. Thorne’s qualifications to render the opinion proffered in this case.

**B. Dr. Thorne’s testimony is relevant to the many issues raised in Plaintiff’s Complaint.**

As noted above, Dr. Thorne’s toxicological profiles are especially relevant to the RCRA and tort issues that are central to the case at bar, *e.g.* they help the trier-of-fact understand the significance of the exposure pathways and the exceedances of regulatory levels found by Dr. Rice and Dr. Bell.

**1. Dr. Thorne’s testimony will help explain the need for Defendants to comply with TSD requirements.**

In its Mar. 20, 2006 Order, this Court granted partial summary judgment to Plaintiff, finding that that the Carlisle facility was an unpermitted Treatment, Storage, and Disposal (“TSD”) facility because Defendants stored hazardous wastes at the facility (*for at least six years*) without the requisite permits. (Doc.118, at pp. 3-4). The Court deferred decision on a remedy until there was a demonstration that the TSD violations, including the failure to do corrective action, were causing or could cause environmental harm, *i.e.*, whether granting an injunction would serve the purpose of the RCRA, which is to “minimize the present and future threat to human health and the environment.” (*Id.*, at pp. 4-5). Dr. Thorne’s toxicological profiles of the chemicals present at the site, including a description of their additive and synergistic properties, are relevant for showing the potential current and future threats presented by the site and the need for the Defendants to undertake corrective action.



As an unpermitted TSD facility, Carlisle must perform corrective action for “*all releases of hazardous waste or constituents from any solid waste management unit...regardless of when such waste was placed in the unit.*”<sup>6</sup> 42 U.S.C. § 6924. Corrective action is a key safeguard for protecting human health and the environment from exposure to releases of hazardous constituents from hazardous waste facilities. Corrective action requires that a facility fully characterize the vertical and horizontal extent of the migration of hazardous constituents in soil and groundwater, sampling around and under from the known areas of waste management to determine the boundaries of contaminants, and that the facility remediate those areas of contamination. *See generally*, 42 U.S.C.A. § 6924 (u) and (v); *see also* 40 C.F.R. § 264.101.

Plaintiff seeks an injunction enjoining the Defendants to perform corrective action, *i.e.*, to fully investigate the extent of the contamination and then to remedy the present and future environmental harm at the site. Dr. Thorne opines on many of the harmful characteristics of the chemicals found at the site (that threaten to continue to migrate along the pathways identified by others) and states that the potential harm to humans and the environment, if exposed to the chemicals presently located there, is great. That is, Dr. Thorne’s testimony will assist the trier-of-fact in understanding that Defendants’ failure to do corrective action is not merely a “procedural violation” and that irreparable injury to humans and the environment “may” result. Single chemical risk assessments and single chemical exposure assessments are inferior means of gauging the need for further investigation and corrective action. The issues here involve multimedia *chronic* exposure to multiple chemicals.

As noted, Dr. Thorne’s opinion works in tandem with the Plaintiff’s other experts. He describes the toxic nature of the chemicals that have been released into the environment from the

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<sup>6</sup> The application of 40 C.F.R. § 264, which contains in part the corrective action requirements, to unpermitted TSD facilities was fully briefed in Plaintiff’s May 12, 2004 Partial Motion for Summary Judgment. (Doc. 85, at pp. 4-6).

numerous SWMUs that are identified by Dr. Bell. Both Dr. Bell and Dr. Rice describe the various mechanisms through which these contaminants are migrating, unchecked and unmonitored, into the surrounding community via numerous pathways of migration. Dr. Thorne will explain why releasing (*e.g.*) TCE (Ex. C, pp. 2) requires remediation and why the release of uncontaminated water does not.<sup>7</sup>

**2. Dr. Thorne's testimony is relevant to Plaintiff's imminent and substantial endangerment claims.**

Dr. Thorne's testimony is centrally relevant to Plaintiff's Imminent and Substantial Endangerment claim brought pursuant to Section 6972(a)(1)(B) of the RCRA. Plaintiff is alleging under that provision that Defendants' "*past* or present handling, storage, treatment, transportation, or disposal of *any solid or hazardous waste...may* present an imminent and substantial endangerment to health or the environment." 42 U.S.C.A. § 6972(a)(1)(B).

The *Lincoln Properties* court interpreted that provision in a seminal case that is factually similar to the case at bar. *Lincoln Properties, LTD v. Higgins*, 1993 WL 217429 (E.D. Cal. 1993)(not reported, Ex. E, Notice of Manual Filing Attached). First, the *Lincoln Properties* court stated that it "is significant that the word 'may' precedes the standard of liability" because it is "intended to confer upon the courts the authority to grant affirmative equitable relief to the extent necessary to eliminate *any risk* posed by toxic wastes." *Id.*<sup>8</sup> Endangerment means a "threatened or potential harm and does not require proof of actual harm." *Id.*, citing *Dague*, 935 F.2d. at 1356. Additionally, "a finding of 'imminence' does not require a showing that actual

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<sup>7</sup> Defendants attempt to trivialize the impact of their years of contamination and illegal disposal on the site by noting "even water can be toxic." (See Defendants' Motion at, 4).

<sup>8</sup> quoting *Dague v. City of Burlington*, 935 F.2d 1343, 1355 (2nd Cir.1991) (quoting *United States v. Price*, 688 F.2d 204, 213-14 (3rd Cir.1982.)) (emphasis added in *Dague* ), *rev'd in part on other grounds*, 112 S.Ct. 2638 (1992).

harm will occur immediately<sup>9</sup> so long as the risk of threatened harm is present.” *Id.*, citing *Dague*, 935 F.2d at 1356. As long as the “factors giving rise” to [the endangerment] are present,” it does not matter that “the harm may not be realized for years.” *Id.*, citing to *United States v. Conservation Chemical*, 619 F.Supp. 162, 193 (W.D. Mo. 1985).

With respect to explaining the meaning of substantial, the *Lincoln Properties* court stated:

“the word ‘substantial’ does not require quantification of the endangerment (e.g., proof that a certain number of persons will be exposed, that ‘excess deaths’ will occur, or that a water supply will be contaminated to a specific degree). Instead, the decisional precedent demonstrates that ***an endangerment is substantial if there is some reasonable cause for concern that someone or something may be exposed to a risk of harm by a release or a threatened release of a hazardous substance if remedial action is not taken.***”

*Id.* (emphasis added). “A number of factors (e.g., the quantities of hazardous substances involved, ***the nature and degree of their hazards***, or the potential for human or environmental exposure) must be considered in determining whether there is reasonable cause for concern, although in any given case, one or two factors may be so predominant as to be determinative on the issue.” *Buchholz v. Dayton Intern. Airport*, 1995 WL 811897, \*23 (S.D. Ohio 1995), citing *B.F. Goodrich Co. v. Murtha*, 697 F. Supp. 89, 96 n.8 (D. Conn. 1988) (emphasis added) (Buchholz Ex. F, Notice of Manual Filing Attached).

Dr. Thorne’s toxicological profiles are centrally relevant to the substantiality requirement because they demonstrate that “there is some reasonable cause for concern that someone or

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<sup>9</sup> Instead, it is only required that the endangerment, i.e., the potential harm, “threatens to occur immediately.” *Meghrig v. KFC Western, Inc.*, 516 U.S. 479, 486 (1996). This much is made clear by the Supreme Court when it stated that the imminence requirement “implies that there must be a threat which is present *now*, although the impact of the threat may not be felt until later.” *Id.*, quoting *Price v. United States Navy*, 39 F.3d 1011, 1019 (9<sup>th</sup> Cir. 1994).

something may be exposed to a risk of harm by a release or a threatened release of a hazardous substance if remedial action is not taken.” Dr. Thorne provides testimony regarding the effects of chemicals such as trichloroethylene, 1,1,1 trichloroethane, and vinyl chloride. (Ex. C, pp. 2-5). Dr. Thorne opines that many of these chemicals are biopersistent, bioaccumulative, carcinogenic, mutagenic, and describes which chemicals are neurotoxins or reproductive hazards, as well as the effect of exposure on other biological systems. Dr. Thorne describes the synergistic and additive effects of exposure to the array of chemicals. (Ex. C, pp. 9). *He also makes clear that for some of these chemicals, there is no “safe” level of exposure.* (Thorne Decl., ¶ 5, attached hereto as Ex. G).

Dr. Thorne opines that these chemicals have the potential to harm both people and the environment, *i.e.*, that there is reasonable cause for concern that someone or something will be exposed. Therefore, his testimony assists the trier-of-fact in understanding that the chemicals’ presence needs to be investigated so that appropriate remedial decisions can be made.<sup>10</sup>

### **3. Dr. Thorne’s opinion is also relevant to Plaintiff’s common law claims (nuisance, trespass and negligence claims).**

Dr. Thorne’s opinions are also relevant to Plaintiff’s Nuisance, Trespass and Negligence claims. For example, Dr. Thorne’s testimony is relevant to: (1) showing the gravity of the nuisance conditions and, (2) the threat to the comfort, health, and safety of the Plaintiff and others potentially exposed to future off-gassing of chemicals during, e.g., plant watering

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<sup>10</sup> Such evidence is commonly relied upon by courts in determining whether the may present an imminent and substantial endangerment standard has been met. For example, in *Maine People’s Alliance v. Holtrachem Manufacturing Company, LLC.*, 211 F.Supp.2d 237 (D. Me. 2002), Plaintiffs’ expert, Dr. Phillippe Grandjean, provided testimony regarding the potential adverse effects of exposure to methylmercury, much similar to that being offered by Dr. Thorne in the case at bar. Dr. Grandjean, in that case, testified regarding the effects of methylmercury exposure on women and children, including the effects of exposure on central nervous system function. *Id.* at 245. Dr. Grandjean’s testimony was based on a study that was done at a site different than the one where the endangerment was found to exist. Dr. Grandjean, based on that study, also opined on the degree of the endangerment. *Id.* at 245-246, n. 10.

operations or irrigation of lands around Carlisle. Dr. Thorne's testimony will assist the trier-of-fact in finding that injunctive relief, in the form of ordering Defendants to remedy the Defendants' trespass onto Plaintiff's property and to abate the nuisance, is proper.

Additionally, only by understanding the toxic nature of the chemicals released by Defendants into the groundwater beneath Mr. Hodgins' property can the trier-of-fact fully determine the damages to which Mr. Hodgins is entitled under his various common law claims.<sup>11</sup> For example, a defendant that spills a load of ping-pong balls onto another's land may technically be liable for trespass, but damages would be minor since ping-pong balls are harmless. The release of toxic chemicals onto another's property is of much greater consequence, and Dr. Thorne's testimony about why those chemicals are considered toxic will help establish what measure of damages is appropriate for Plaintiff's tort claims. It is estimated elsewhere that these chemicals often take about 30 years to remove from groundwater. (Bell Declaration, ¶ 10).

#### **4. The probative value of Dr. Thorne's testimony outweighs any supposed prejudice that would result from his testimony.**

As detailed above, Dr. Thorne's testimony is probative on both of Plaintiff's RCRA claims and to at least 3 of Plaintiff's tort claims. Defendants argue that Dr. Thorne's testimony will "waste time on a tangential issue" (but never define the tangential issue) and mislead the jury regarding the toxicity of these chemicals. Such arguments do not satisfy Rule 403's requirement that there be a showing that the prejudice will substantially outweigh the probative value of the proffered evidence. They also ignore the fact that the RCRA issues must be tried to the Court and, indeed, all issues *may* be so tried.

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<sup>11</sup> Dr. Thorne's testimony will also aid the trier-of-fact in determining whether punitive damages are proper. Dr. Thorne's testimony regarding the toxicological profiles of the various chemicals is relevant to showing that Defendant's failure to remedy the trespass and nuisance, despite the presence of the chemicals in the ground, shows "a conscious disregard for the rights and safety of other persons that has a great probability of causing substantial harm." *Verchio v. Gregory* (attached as Ex. H), 2007 WL 613983, \* 5 (Ohio App. 8 Dist.), citing *Preston v. Murty* (1987), 32 Ohio St.3d 334

First, the substantiality of the endangerment, the proper measure of damages, and the need for corrective action go to elements of Plaintiff's claims and demonstrate the need for an injunctive remedy. The need for a remedy and elements of claims are not "tangential issues."

Second, Dr. Thorne's testimony, rather than misleading the trier-of-fact, will aid the trier-of-fact in understanding that these chemicals are not benign and assist the trier-of-fact in understanding the potential effects associated with these chemicals, many of which involve complicated multiple exposure and bioaccumulative issues.

Defendants have not satisfied their burden of showing that the probative value of Dr. Thorne's testimony is substantially outweighed by the prejudicial effect of his testimony.<sup>12</sup> In fact, as outlined above, the probative value outweighs any prejudicial effect, and Rule 403 does not provide a basis to exclude Dr. Thorne's testimony.

**5. It is Defendants' "exposure assessment" arguments that are irrelevant to the issues in this case.**

Defendants attempt to apply the relevancy prong of *Daubert* without any discussion of the actual issues in this case. Instead, as with their other *Daubert* motions in this case, Defendants offer this court only diversion and innuendo when attacking Dr. Thorne's testimony. Plaintiff's claims do not require a showing that anyone has actually been exposed to a certain "dose" of chemicals. For many reasons, the dose issue is irrelevant to multi-chemical *chronic* exposure involving threat of future harm, even though dose is relevant to *acute* exposure to single chemicals in the bodily injury context.

Plaintiff's imminent and substantial endangerment claim only requires a showing of threatened or potential harm, not actual harm. *Lincoln Properties*, 1993 WL 217429 at \* 13. This

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<sup>12</sup> For example, Defendants make a bare, conclusory statement that Dr. Thorne's testimony will cause unfair prejudice to Defendant. Yet, no basis for this statement is included, such as whether testimony is likely to be inflammatory or lead the trier-of-fact to decide the case based on emotion rather than reason.

is a point that Defendants concede (at page 3) in their Motion to Exclude the Testimony of Dr. Bruce Bell (“**whether the contaminants pose an imminent and substantial threat of harm now or in the future**”). Doing a dose response for someone threatened to be exposed in the future is obviously impossible.

Second, an endangerment to the *environment* is sufficient to demonstrate a violation of the RCRA’s citizen Imminent and Substantial Endangerment Provision. *See* 42 U.S.C.A. § 6972(a)(1)(B)(“endangerment to health *or the environment*” (emphasis added); also see *Raymond K. Hoxsie Real Estate Trust v. Exxon Educ. Foundation*, 81 F.Supp.2d 359, 367 (D.R.I. 2000)(threat to just soil and groundwater sufficient because the “statute clearly speaks of endangerment to the ‘environment’”); *Buchholz v. Dayton Intern. Airport*, 1995 WL 811897, \*24 (S.D.Ohio1995) (“An imminent and substantial endangerment to the ‘environment’ may exist even where there is no threat to humans.”). Certainly, an assessment of human exposure to the chemicals at the site is not necessary or even relevant for evaluating endangerment to the environment.

Likewise, exposure need not be shown to trigger Defendants’ TSD obligations, including their corrective action obligations. *See generally*, 42 U.S.C.A. § 6924(u),(v); 40 C.F.R. § 264.101. Furthermore, an exposure assessment is not necessary to establish that Defendants have trespassed on Plaintiff’s property and have created a nuisance on that property by contaminating the groundwater with toxic solvents.<sup>13</sup>

Even if exposure did need to be shown, that fact still would not affect the admissibility of Dr. Thorne’s testimony. *Daubert* does not require that an expert prove all elements of a claim in order to be relevant, only that it be relevant to “any issue” in the case. The time for determining

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<sup>13</sup> Additionally, a exposure assessment or proof of actual human exposure is not required for Plaintiff to recover for the property damage and economic loss suffered because of Defendants’ negligent acts or omissions to establish Defendants’ “conscious disregard” of health and safety.

whether the Plaintiff has made the requisite showing to meet its burden of proof for each of his counts is at trial; it is not proper for Defendants' to ask that this Court make that determination as part of a *Daubert* analysis.

What is more, Defendants ignore the proper context for toxicological risk assessments and exposure analyses. (Ex. G, ¶ 9). Dr. Thorne's testimony is not offered to prove the causation elements of any of Plaintiff's claims. Thus, the exposure cases that Defendant cites are irrelevant to the admissibility of Dr. Thorne's testimony. (See page 21 *infra*). Indeed, Dr. Thorne makes clear that a toxicological profile is more appropriate in the case at bar because it accounts for the potential "full range of adverse effects." (Ex. G, ¶ 5). Accounting for the full range of potential health effects is what RCRA is aimed at.

**C. Dr. Thorne's opinion satisfies the reliability requirement of *Daubert*.**

As detailed below, the relevant *Daubert* factors demonstrate that Dr. Thorne's toxicological profiles are "scientific knowledge," not speculation or conjecture.

**1. Dr. Thorne's methodology satisfies the applicable *Daubert* factors.**

Dr. Thorne's opinions include a series of toxicological profiles for toxicants found at, around and under the Carlisle site, including on and under the surface of Plaintiff's property. Thus, the relevant methodology for this *Daubert* motion is that for creating a toxicological profile of a toxicant, not the methodology for a risk assessment or exposure assessment. As Dr. Thorne states, the methodologies for a toxicologic risk assessment or exposure assessment and for a toxicological profile are "distinct and separate." (Ex. G, ¶ 4).

The toxicological profile methodology, as Dr. Thorne states, is proper here because it describes the "full range of adverse effects" that can be produced by a single toxicant or set of



toxicants. (Ex. G, ¶ 5). The methodology for development of a toxicological profile for a chemical is explained by Dr. Thorne:

The development of a toxicological profile involves the compilation and evaluation of data on the toxicologic properties and potential adverse health outcomes associated with a particular toxicant or set of toxicants. Since a single toxicant can produce a spectrum of health effects, the full range of adverse effects must be described.

(*Id.*, ¶ 5). Dr. Thorne followed the relevant methodology. (*Id.*, ¶ 4). He compiled and evaluated data and other information on the toxicologic properties and potential adverse health effects from the peer-reviewed studies of the U.S. Department of Health and Human Services, the Centers for Disease Control, the International Agency for Research on Cancer, the United States Environmental Protection Agency, as well as other relevant, peer reviewed-studies, including dose-response studies. (Ex. C, at pp. 10). He described the full range of potential effects. (Ex. G, ¶ 4).

Additionally, Dr. Thorne states that the methodology and principles that he relied upon in forming his opinions have been published and were subject to peer-review. As Dr. Thorne states, “The Agency for Toxic Substances and Disease Registry, a component of the Centers for Disease Control and Prevention, has produced toxicological profiles for 289 chemical compounds using the same methodological steps.” (Ex. G, ¶ 6). “Peer review and publication should be viewed as evidence that the theory and methodology are scientific knowledge capable of being scrutinized and have in fact been scrutinized by the scientific community.” *U.S. v. Bonds*, 12 F.3d 540, 559 (6<sup>th</sup> Cir. 1993).

Further, the methodology employed by Dr. Thorne is generally accepted in the relevant scientific community and “has been standard practice in the field of toxicology for over 25

years.” (Ex. G, ¶ 7). Also, as Dr. Thorne notes, the toxicological profile methodology was not created for the purposes of this litigation. (*Id.*, ¶ 8).

What is more, contrary to Defendant’s representations, Dr. Thorne verified the “actual presence” and use of chemicals in and around the Carlisle facility. As Dr. Thorne stated in his deposition, he relied on documents concerning use and site studies to reach his conclusion that these chemicals were used:

Okay. So at the time I wrote my report, I knew of the listed compounds. I knew of the letters that I’ve referred to several times. I also knew that there had been some soil sampling performed that showed that there were compounds that are on – contained within my report appearing at levels that would not be expected in normal samples or non-contaminated samples, so that was also a piece of information that was part of my knowledge at the time that I wrote this report.

(Thorne Depo. pp. 64, Ex. D).<sup>15</sup> More importantly, the presence or use by Carlisle of the chemicals discussed in Dr. Thorne’s report is not in dispute and will be established at trial via Defendants’ own records, witnesses and experts. Moreover, Dr. Bruce Bell will be providing the testimony concerning what is known about chemical levels to date, *i.e.*, the areas where contaminant levels are over government screening standards such as Maximum Contaminant Levels, Ecotox levels, EPA migration to groundwater levels and EPA generic, residential, health based screening levels.

Therefore, Dr. Thorne’s methodology satisfies the reliability requirement of *Daubert*.

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<sup>15</sup> Dr. Thorne later described the Cox, Colvin soil sampling on which he relied:

“It generally consisted of findings from a soil gas investigation to look at compounds in the soil and water on the premises of the facility, and that showed – it demarcated plumes or concentration profiles of the assessed compounds, indicating where there were positive findings or what you might call hot spots. And some of these were within the facility – underneath the – within the building itself or on the properties. Some of them were at the edge of the property and were, if you will, semicircles, showing partially the extent of the plume on the facility grounds, but then just going to the edge of the property itself.” (Thorne Depo. pp. 82-83, Ex. D).

**2. Defendant's arguments that Dr. Thorne did not follow the methodology for performing a toxicologic *risk assessment* are immaterial to the substantive law at issue and do not provide a basis for exclusion under *Daubert*.**

Faced with the superiority of the toxic profile's reliability and relevancy, Defendant's assert that: "...Plaintiffs must demonstrate that the risk assessment analysis undertaken by Dr. Thorne comports with risk assessment methodologies used by toxicologist generally." ***Dr. Thorne did not do a risk assessment analysis.*** Consequently, there is no need for him to comport with "risk assessment methodologies." Dr. Thorne is testifying as to the toxicological profiles of the chemicals either used at or released from the Carlisle facility, and he followed the relevant methodology for doing so.<sup>16</sup>

Defendants next appear to argue that a toxicologic risk assessment analysis must be done for Plaintiff to succeed on his imminent and substantial endangerment claim. Even if that were true, which it is not, it would still not serve as a basis to exclude Dr. Thorne's testimony. If Defendants wish to argue that the Plaintiff cannot succeed on its RCRA endangerment claim because he did not offer a risk assessment into evidence, the time to do that is at trial, not a *Daubert* motion.

***In fact, a risk assessment is not required to prove that the Carlisle site may present an imminent and substantial endangerment to health or the environment.*** Quantification of the threat is not necessary to show that a threat is "substantial." *Lincoln Properties, Ltd.*, 1993 WL 217429, at \*13 (substantiality "does not require quantification of the endangerment (e.g., proof that a certain number of persons will be exposed, that 'excess deaths' will occur, or that a water supply will be contaminated to a specific degree)"). Indeed, the relief obtained in RCRA cases is often an injunction requiring Defendant to "quantify" the threatened harm. *See e.g., Maine*

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<sup>16</sup> Defendants also argue that Dr. Peter Thorne should have done environmental modeling or mathematical modeling. However, environmental modeling or mathematical modeling are not part of the methodology for a toxicological profile.

*People's Alliance and Natural Resources Defense Council v. Mallinckrodt, Inc.* 471 F.3d 277, 296-298 (1<sup>st</sup> Cir. 2006) (injunction granted ordering a study to determine the scope of the endangerment).

Additionally, a risk assessment is not needed to trigger Defendant's corrective action obligations under the TSD requirements (See 42 U.S.C.A. § 6924(u),(v); 40 C.F.R. § 264.101) or to establish the elements of the nuisance and trespass claims.

Defendants' entire "risk assessment" argument is irrelevant to any count in this case. Plaintiff is not attempting to prove that bromide or a certain prescription drug caused birth defects,<sup>17</sup> or that exposure to a prescription drug caused cataracts,<sup>18</sup> or that exposure to latex paint led to asthma,<sup>19</sup> or that exposure to a product caused leukemia,<sup>20</sup> or that exposure to a chemical caused neurological damage,<sup>21</sup> or that PCB exposure caused plaintiff injuries,<sup>22</sup> or that a smoking patch caused a heart attack.<sup>23</sup> Defendant's reliance on cases involving the above disputes shows the fundamental flaw with their *Daubert* motion. This case involves a statute (RCRA) that mandates the investigation and clean up of contamination ***before*** injury actually occurs. Since this is ***not*** a bodily injury case – the proper methodology for proving "causation" in a bodily injury case is simply irrelevant. Instead, Dr. Thorne's toxicological profiles provide the Court with part of the information needed to protect the public from further, future exposure to the unchecked spread of multiple chemicals through multiple media.

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<sup>17</sup> *Turpin v. Merrell Dow Pharmaceuticals*, 959 F.2d 1349 (6<sup>th</sup> Cir. 1992)(Bendectin exposure case) and *Wintz By and Through Wintz v. Northrop Corp.*, 110 F.3d 508 (7<sup>th</sup> Cir. 1997)(bromide exposure case).

<sup>18</sup> *Grimes v. Hoffman-Laroche, Inc.*, 907 F.Supp.33 (D. N.H. 1995).

<sup>19</sup> *Cartwright v. Home Depot, U.S.A., Inc.* 936 F.Supp. 900 (M.D. Florida 1996).

<sup>20</sup> *Mitchell v. Gencorp., Inc.*, 165 F.3d 778 (10<sup>th</sup> Cir. 1999).

<sup>21</sup> *Downs v. Perstop*, 26 Fed. Appx. 472, 2002 WL 22000 (6<sup>th</sup> Cir. 2002).

<sup>22</sup> *Mancuso v. Consolidated Edison Company of New York, Inc.*, 967 F. Supp. 1437 (S.D. N.Y. 1997).

<sup>23</sup> *Rosen v. Ciba-Geigy Corp.*, 78 F.3d 316 (7<sup>th</sup> Cir. 1996).

## **V. Conclusion**

For the foregoing reasons, Defendants' Motion to Exclude Expert Testimony of Dr. Peter Thorne must be denied in its entirety.

Respectfully submitted,

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**CERTIFICATE OF SERVICE**

I hereby certify that on March 30, 2007, a copy of Plaintiff Pierre Hodgins' Response in Opposition to Defendants' Motion to Exclude the Expert Testimony of Dr. Peter Thorne was filed electronically. Notice of this filing will be sent to all parties by operation of the Court's electronic filing system. Parties may access this filing through the Court's system.

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